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In the Supreme Court of the United States

OCTOBER TERM, 1997

CASE CORPORATION, *Petitioner*,

v.

DANIEL FREEMAN, *Respondent*.

Petition for a Writ of Certiorari to the United States Court of Appeals for the Fourth Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

1. Whether the trial court's "gatekeeper" responsibility under *Daubert* v. *Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), may be bypassed altogether when an expert testifies about the application of scientific knowledge but purports to rely only on "experience" or "training" rather than on any "technique" or "methodology" of his or her professional discipline.

2. Whether this Court's statement in *Daubert* that "[t]he focus * * * must be solely on principles and methodology, not on the conclusions that they generate," 509 U.S. at 595, precludes the trial court from examining the reasoning that connects an expert's hypothesis to a conclusion about an issue in the case.

RULE 29.6 STATEMENT

Case Corporation has no parent companies. The following is a list of the non-wholly owned subsidiaries of Case Corporation:

Case Steyr Landmaschinentecknik AG
Liuzhou Case Liugong Construction
Equipment Company
Bratstoft Maquinas E Systemas Agro-Industriais S.A.
UzCaseagroleasing
Hay & Forage Industries
Consolidated Diesel Company
Amity Technology L.L.C.
Brahma Steyr Tractors Limited
Megavolt L.L.P.
Ukrainian Agricultural Development Co.
Masstock (Zambia) Limited
Case Equipment Loan Trust 1994-A
Case Equipment Loan Trust 1994-B
Case Equipment Loan Trust 1994-C
Case Equipment Loan Trust 1995-A
Case Equipment Loan Trust 1995-B
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PETITION FOR A WRIT OF CERTIORARI

Case Corporation respectfully petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Fourth Circuit.

OPINIONS BELOW

The decision of the court of appeals (App., *infra*, 1a-14a) is reported at 118 F.3d 1011. The order denying the petition for rehearing and suggestion for rehearing in banc (App., *infra*, 15a-16a) is not reported. The judgment of the district court (App., *infra*, 17a-49a) is reported at 924 F. Supp. 1456. The district court's order denying Case's motion in limine to exclude the testimony of plaintiff's expert (App., *infra*, 50a) and the memorandum opinion (App., *infra*, 51a-66a) are not reported.

JURISDICTION

The judgment of the court of appeals was entered on July 8, 1997, and a timely petition for rehearing with suggestion of rehearing in banc was denied on August 5, 1997. The jurisdiction of this Court is invoked under 28 U.S.C. § 1254(1).

RULE INVOLVED

Federal Rule of Evidence 702 provides:

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

STATEMENT

This is a product liability action arising out of injuries sustained in a tractor roll-over accident. On the day of the accident, the plaintiff, Daniel Freeman, was mowing his lawn

with a Case 1130 tractor. App., *infra*, 18a. As he mowed near a steep embankment in his back yard, Freeman struck a partially buried boulder. *Ibid.* He stopped the tractor by releasing the speed ratio control (SRC) pedal, which makes the tractor move forward or backward. *Ibid.* & n.1. Freeman then depressed the clutch, to disengage the power to the blades and wheels, and raised the mower deck to prevent the blades from restriking the rock when restarted. *Id.* at 18a. He then intended to release the clutch, with the engine still running, to spin the blades in the air in an effort to determine whether they had been warped by contact with rock. *Ibid.* Freeman testified that while attempting this maneuver, he thought his foot was on the brake pedal, which is located near the SRC pedal. *Ibid.* In fact, however, Freeman had depressed both the brake and SRC pedals, and when he released the clutch, the tractor moved forward over the embankment. *Ibid.* Freeman jumped off the machine and rolled down the hill. *Id.* at 19a. The tractor also tumbled down the hill, and Freeman was seriously injured when he was struck by the tractor blades, which were still rotating. *Ibid.*

Freeman sued Case Corporation, the manufacturer of the tractor, under theories of negligence and breach of warranty. App., *infra*, 17a. The district court had jurisdiction under 28 U.S.C. § 1332. At trial, plaintiff attempted to prove that the tractor suffered from two design defects that rendered the Case 1130 unreasonably dangerous, *id.* at 20a, a prerequisite to recovery in negligence or warranty under Virginia law. C.A. App. 1677-1679, 1682 (jury instructions). First, plaintiff asserted that the brake pedal was placed dangerously close to the SRC, and that this proximity created an unacceptable risk of inadvertent co-engagement of the pedals. App., *infra*, 20a. Second, he contended that the absence of an operator presence control — a device that stops the engine automatically when the

operator leaves the driver's seat — also made the tractor unreasonably dangerous. *Ibid.*[1]

To prove his design defect theories, plaintiff proffered the testimony of a single expert witness, Smith Reed, a mechanical engineer. App., *infra*, 22a. (As the court of appeals recognized, *id.* at 8a, Reed's testimony was essential to any verdict for Freeman under Virginia law. See *Alevromagiros* v. *Hechinger Co.*, 993 F.2d 417, 421 (4th Cir. 1993).) Reed opined that the Case 1130 was defective because the SRC pedal was too close to the tractor's brakes. C.A. App. 677.[2] As a result, Reed believed that an operator intending to press only the brakes may also inadvertently press the SRC, allowing the tractor to move forward unexpectedly. *Ibid.*

The only bases that Reed gave for his opinion were vague references to his "own observation" and "studies," C.A. App. 707, and his self-professed "[s]ound engineering judgment," C.A. App. 679. Although Reed had reviewed a variety of trade publications and other materials before testifying, he identified only three publications — general documents that "described the human body" and the "expected fatigue rates" of individuals applying "various pedals" — that were relevant to his opinion. C.A. App. 659-664, 707-709. Reed did not, however, explain how any of those documents supported his opinion or what role

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[1] Because the Fourth Circuit based its decision on the purported pedal defect, the court did not resolve issues related to the absence of an operator presence control device. App., *infra*, 6a n.3. Should this Court grant certiorari and reverse the judgment, those issues would be resolved by the court of appeals on remand.

[2] At trial, Case introduced the testimony of two experts who described a number of real-life applications of the Case 1130 that require the brake and SRC pedals to be in close proximity to one another. C.A. App. 835-837, 1576-1578.

they played in his analysis. Similarly, while Reed performed limited "tests" on the tractor — operating it while trying to recreate the sudden forward movement described by the plaintiff, and placing his foot on the brake and SRC pedals in an effort to determine whether the two pedals could be engaged simultaneously,[3] C.A. App. 668-670 — he did not explain how these "tests" supported his opinion. On cross-examination, Reed admitted that he had not performed any controlled testing on the pedals that could give any indication of the predictability or reliability of his conclusion that the pedal configuration results in inadvertent dangerous co-activation of the pedals. C.A. App. 708, 712. Indeed, Reed testified that his testing established only that it is "plausible" to contact the two pedals simultaneously. C.A. App. 668-669. Finally, Reed did not testify that Case had failed to comply with any government, industry, or other safety standard applicable to the Case 1130. While in a pre-trial report Reed had expressed the opinion that the pedal configuration violated an industry standard, at trial he explicitly "reevaluate[d] [his] position" and testified that he "cannot say that [the pedal configuration] was a violation of this standard or not." C.A. App. 701-703.

In light of the deficiencies in Reed's testimony, Case filed a motion in limine seeking to bar Reed from testifying under the standards set forth in *Daubert* v. *Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). App., *infra*, 29a. The district court denied the motion, holding that "*Daubert* applies only to

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[3] In contrast to Reed's rudimentary "testing" of the Case 1130, Case introduced at trial the results of a study of 1,158 test drives involving a pedal arrangement virtually identical to that of the Case 1130 in which inadvertent misapplication of the pedals occurred less than .2% of the time. C.A. App. 833-835, 838, 840-844, 2114-2115, 2110. This is approximately the same rate at which automobile drivers inadvertently misapply the accelerator and brake pedals. C.A. App. 842-843, 2119.

scientific evidence, of which Reed's proposed testimony was not an example." *Ibid.*; see also *id.* at 50a, 57a.

Based on Reed's testimony, the jury returned a verdict against Case and awarded plaintiff $3.8 million in damages. App., *infra*, 17a. After trial, the district court again rejected Case's argument that Reed's testimony was inadmissible under *Daubert*, *id.* at 31a, but it granted Case's motion for judgment as a matter of law, holding, *inter alia*, that Reed's testimony was insufficient to establish that the pedal configuration on the Case 1130 was defective, *id.* at 23a. The court explained that "Reed's testimony was not sufficient to carry plaintiff's burden, since nothing suggests that the literature reviewed significantly bolstered Reed's opinion that the design of the pedals was defective." *Ibid.* In addition, the district court observed that "Reed's 'sound engineering judgment' was not a basis for his opinion, but rather a mere restatement of that opinion." *Id.* at 22a.

The Fourth Circuit reversed, reinstating the liability finding against Case, and remanded for further proceedings to determine the amount by which the verdict was excessive. The court of appeals affirmed the district court's rejection of Case's *Daubert*-based challenge to Reed's testimony, but on different grounds. App., *infra*, 9a n.6. In particular, the court declined to decide whether the district court was correct in its view that *Daubert* does not apply outside the scientific context. *Ibid.* Instead, the court, following the Tenth Circuit's decision in *Compton* v. *Subaru of America, Inc.*, 82 F.3d 1513, 1518 (10th Cir.), cert. denied, 117 S. Ct. 611 (1996), held that "where an expert relies on his experience and training and not a particular methodology to reach his conclusions, 'application of the *Daubert* [analysis] is unwarranted.'" *Ibid.* In addition, although the court acknowledged that Case had attacked "deficiencies in [Reed's] analysis," *id.* at 11a, it concluded that "Case d[id] not challenge Reed's 'reasoning or methodology' but his ultimate conclusion, that the 1130 is unreasonably dangerous." *Id.* at 9a

n.6. Finally, the court held that Reed's opinion was sufficient under Virginia law to support a jury verdict because (1) Reed applied his experience and training in tractor design in reaching his conclusion; (2) he reviewed numerous published materials before reaching his conclusion; and (3) he inspected and tested the tractor during his investigation. *Id.* at 10a-11a.

REASONS FOR GRANTING THE PETITION

There is no question that the framework adopted by this Court in *Daubert* in 1993 applies to expert testimony concerning subjects that are, in the Newtonian sense, purely scientific (the kind of evidence at issue in *Daubert*). Outside of that context, however, the Court's opinion has generated more questions than answers in the last four years. In particular, the courts of appeals are deeply divided with respect to whether and how the *Daubert* framework applies to expert testimony involving the *application* of scientific knowledge to concrete and practical problems that arise in the course of litigation.

This case is a prototypical example of expert testimony involving "applied science." The plaintiff here sought to introduce the testimony of a mechanical engineer to prove that a product was defectively designed. The district court declined to apply *Daubert* on the ground that engineering testimony is "technical," not "scientific," and that *Daubert* applies only to the latter kind of testimony. App., *infra*, 29a. The court of appeals also held that *Daubert* did not apply, on the slightly different rationale that the testimony of an expert who purports to rely on his "experience and training," instead of any particular "principles or methodology" of engineering science, is exempt from *Daubert* scrutiny. App., *infra*, 9a n.6. As a result, the wholly conclusory testimony of the plaintiff's only "expert" was deemed sufficient to uphold a multi-million dollar jury verdict.

The rulings of the courts below are symptomatic of the pervasive confusion in the lower courts over *Daubert*'s meaning. The Fourth Circuit's holding here is consistent with the views of three other circuits, but it conflicts with the decisions of six other courts of appeals, which have applied *Daubert* to expert testimony involving the application of scientific knowledge regardless of the purported basis for the expert's opinion. In addition, the Fourth Circuit's fundamental misapplication of this Court's admonition that "[t]he focus [of the *Daubert* inquiry] must be solely on principles and methodology, not on the conclusions that they generate," 509 U.S. at 595, also conflicts with the decisions of other circuits.

Taken as a whole, the approach adopted by the court of appeals here seriously undermines the "gatekeeper" obligations imposed on trial courts by Rule 702 and creates a gaping loophole through which experts for hire can completely avoid scrutiny of "expert" testimony that consists entirely of conclusions without reasoning. Here, for example, Reed was permitted to offer his credentials and give his opinion, even though he offered no explanation whatever as to why his conclusion (that the pedal configuration was unreasonably dangerous) followed from the only items that he said were relevant to his opinion — general literature "describ[ing] the human body" and the "forces applied to various pedals," and a "test" showing that it is "plausible" to engage the pedals simultaneously. C.A. App. 668-69, 707-09.

In sum, then, this case offers an ideal opportunity for "further development of this important area of the law." *Daubert*, 509 U.S. at 601 (Rehnquist, C.J., concurring in part and dissenting in part). As in *Daubert* itself, this Court should grant certiorari to resolve the "sharp divisions" among the circuits, 509 U.S. at 585, regarding the scope of *Daubert*'s applicability and the meaning of its commands.

I. THE CIRCUITS ARE IRRECONCILABLY SPLIT ON WHETHER *DAUBERT* APPLIES TO EXPERT TESTIMONY CONCERNING THE APPLICATION OF SCIENTIFIC KNOWLEDGE.

A. *Daubert* Left Unanswered A Number Of Fundamental Questions Concerning The Admissibility Of Expert Testimony.

Among the obvious goals of this Court's decision in *Daubert* was "to provide uniformity among the circuit courts by establishing a structure for the admissibility of expert testimony" under the Federal Rules of Evidence. Michael C. Polentz, Comment, *Post-Daubert Confusion With Expert Testimony*, 36 SANTA CLARA L. REV. 1187, 1200 (1996). This goal was reflected both in the Court's decision to grant certiorari "in light of sharp divisions among the courts regarding the proper standard for the admission of expert testimony," *Daubert*, 509 U.S. at 585, and to offer "general observations" that bear on the gatekeeping duties of the federal judiciary, *id.* at 593.

Those gatekeeping responsibilities require district courts, under Rule 702, to "ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable." *Daubert*, 509 U.S. at 589. Thus, "[t]he subject of an expert's testimony must be 'scientific * * * knowledge,'" which "implies a grounding in the methods and procedures of science" and "connotes more than subjective belief or unsupported speculation." *Id.* at 589-590. To assist the lower court on remand, the Court identified four non-exclusive factors that bear on "whether the reasoning or methodology underlying the testimony is scientifically valid and * * * properly can be applied to the facts in issue." *Id.* at 592-593. These factors are: (1) whether the theory or technique "can be (and has been) tested," (2) whether the theory or technique "has been subjected to peer review and publication," (3) the "known or potential

rate of error" and the existence of "standards controlling the technique's operation," and (4) whether the theory or technique has gained "general acceptance" in the relevant field. *Id.* at 593-594.

While *Daubert* eliminated some of the "sharp divisions" among the circuits, it has resulted in others as the lower courts have struggled to apply its precepts across the spectrum of expert testimony. For example, did the Court intend its *Daubert* analysis to apply to all of the categories of evidence under Rule 702, or merely to the "scientific context" present in *Daubert* itself, or even more narrowly still to "'novel' scientific techniques?" See *Daubert*, 509 U.S. at 590 n.8, 592 n.11. Or, to give another example, where did the Court intend to draw the line between the district court's mandated inquiry into the "principles and methodology" undergirding an expert's opinion and the forbidden inquiry into the expert's "conclusions?" See *id.* at 595. In view of these (and other) interpretive puzzles arising out of this Court's *Daubert* opinion, the summary of the post-*Daubert* state of the law provided by one commentator two years ago remains accurate today:

> Although the *Daubert* Court removed the ambiguity surrounding *Frye*'s 'general acceptance' standard, the decision has created ambiguity surrounding what test to apply in *Frye*'s stead. Beyond merely suggesting four factors to aid lower courts in admissibility determinations, the *Daubert* Court offered no further guidance to help lower courts determine scientific validity. The Court's silence has resulted in judicial and academic debate over the required approach. The pre-*Daubert* confusion that the Court sought to eliminate has been replaced by conflict over how to conduct the reliability analysis under Rule 702.

Development in the Law, *Confronting the New Challenges of Scientific Evidence*, 108 HARV. L. REV. 1481, 1488 (1995).

Of course, these problems in the application of *Daubert* were not entirely unexpected. In his separate opinion in *Daubert*, concurring in part and dissenting in part, the Chief Justice (joined by Justice Stevens) "accurately predicted that numerous questions and confusion would arise as district judges tried to apply the Court's opinion." Nancy S. Farrell, Comment, *Congressional Action to Amend Federal Rule of Evidence 702: A Mischievous Attempt to Codify Daubert* v. *Merrell Dow Pharmaceuticals, Inc.*, 13 J. CONTEMP. HEALTH L. & POL'Y 523, 534-535 (1997) (citing *Daubert*, 509 U.S. at 598-600 (Rehnquist, C.J., concurring in part and dissenting in part)). By our count (as of October 27, 1997), *Daubert* had been cited in no less than 730 federal cases, 320 state cases and 980 journal and law review articles, comments and notes. See also Anthony Z. Roisman, *Emerging Law: The Expert Witness in Toxic Tort Litigation*, SB52 ALI-ABA 375, 377 (Feb. 12, 1997) (providing figures as of the end of 1996). Yet, "judging by the decisions of courts facing *Daubert* challenges, both the original opinion and all the subsequent thought ha[ve] produced more confusion, not clarity, and ha[ve] delayed, not expedited, the resolution of cases." *Id.* at 377-378; see also Polentz, *supra*, 36 SANTA CLARA L. REV. at 1202 (observing that *Daubert* "breeds confusion rather than clarity"). The questions presented in this case are at the heart of much of the confusion spawned by *Daubert*.

B. The Fourth Circuit's Holding Is Inconsistent With *Daubert* And Conflicts With The Decisions Of Other Circuits On Whether And How To Apply *Daubert* To Expert Testimony Involving The Application Of Scientific Principles.

The essential holding of the court of appeals here is that the trial court's "gatekeeper" responsibility under *Daubert* may be sidestepped completely when an expert testifies about the application of scientific knowledge, but purports to rely only on "experience" or "training" rather than on any "technique" or

"methodology" of the expert's profession. The court's ruling is both inconsistent with *Daubert* itself and in conflict with the decisions of several other circuits. Moreover, the court's reasoning is manifestly incorrect and will serve only to encourage paid experts to jettison the rigorous analysis normally required by their disciplines.

1. As the Seventh Circuit has stated, a close reading of this Court's opinion in *Daubert* "counsels against a wholesale abandonment of the *Daubert* analysis simply because the issue before the court, although rooted in science, involves the application of science to a concrete and practical problem." *Cummins* v. *Lyle Indus.*, 93 F.3d 362, 367 n.2 (7th Cir. 1996). Indeed, *Daubert* itself held that "*any and all* scientific testimony or evidence" must be evaluated for evidentiary reliability. 509 U.S. at 589 (emphasis added).

It cannot seriously be disputed that an engineer's opinion concerning whether a product is defectively designed is "scientific" in nature. Engineering is "the *science* by which the properties of matter and the sources of energy in nature are made useful to man in structures, machines, and products." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 752 (1986) (emphasis added). Reed himself echoed this definition in describing his profession: "An engineer is a person who is knowledgeable in mathematics and *the sciences* and is able to apply those with judgment * * * for the purpose of helping mankind." C.A. App. 643 (emphasis added). In short, engineering testimony concerning whether the design of a product is defective is plainly rooted in scientific knowledge and therefore must be analyzed under *Daubert*.

Likewise, it is clear that engineers and applied scientists like Reed should arrive at their opinions through the scientific method, which is defined as "the principles and procedures used in the systematic pursuit of intersubjectively accessible knowledge and involving as necessary conditions the recognition

and formulation of a problem, the collection of data through observation and if possible experiment, the formulation of hypotheses, and testing and confirmation of the hypotheses formulated." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 2033 (1986). And it is equally obvious that the results of applying engineering principles to concrete problems constitute scientific "knowledge" — a term that "'applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds.'" *Daubert*, 509 U.S. at 590 (citing WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1252 (1986)). For these reasons, a court considering the admissibility of expert testimony concerning "applied science," such as engineering, has an "obligation to ensure that the proffered testimony pertains to scientific knowledge." *Cummins*, 93 F.3d at 367-368.

This is particularly true in the context of expert testimony in design defect cases. "Design selection and the development of design alternatives, because they use known scientific principles deductively and scientific method inductively for risk analysis, are therefore clearly 'scientific knowledge,' as those terms are used in the *Daubert* opinion." Donald Patterson, *The Citadel Reburied: Restatement of the Law Third Torts: Products Liability*, 63 DEF. COUNS. J. 191, 199 (1996). The Fifth Circuit recently recognized this very point, stating that "this court and others have recognized the utility of testing as a factor for assessing the reliability of proffered expert engineering testimony in alternative design cases" because "[i]t is self evident * * * that an engineer's proffered conclusion as to a feasible alternative design lends itself to verification by controlled testing or experimentation." *Moore* v. *Ashland Chem., Inc.*, 1997 WL 644054, at *11 n.2 (5th Cir. Oct. 20, 1997). See also, *e.g.*, *Cummins*, 93 F.3d at 369 ("testing is a necessary part of the design process"; without testing, "the witness' proffered opinions could not fairly be characterized as scientific knowledge").

2. Although applied science — like the engineering testimony offered by Reed — is plainly rooted in the scientific method and its results constitute scientific knowledge, the court of appeals refused to subject Reed's testimony to the rigors of *Daubert* scrutiny. The court reasoned that engineering experts testifying on the basis of "experience and training" are wholly exempt from *Daubert* scrutiny. App., *infra*, 9a n.6. In so holding, the Fourth Circuit joined the Second, Ninth, and Tenth Circuits, which have also refused to apply *Daubert* to experts applying scientific knowledge whose testimony is based on their practical experience and training rather than a particular methodology:

- *McCullock* v. *H.B. Fuller Co.*, 61 F.3d 1038, 1043 (2d Cir. 1995) (*Daubert* does not apply to expert testimony of consulting engineer whose opinion rested on "extensive practical experience");

- *McKendall* v. *Crown Control Corp.*, 122 F.3d 803, 807 (9th Cir. 1997) (*Daubert* does not apply to testimony "based on [expert's] engineering experience and his having investigated hundreds of fork lift cases over the past thirty years");

- *Compton* v. *Subaru of Am., Inc.*, 82 F.3d 1513, 1519 (10th Cir.) (*Daubert* does not apply where expert did not reach his conclusions "based on any particular methodology or technique," but rather "by drawing upon general engineering principles and his twenty-two years of experience as an automotive engineer"), cert. denied, 117 S. Ct. 611 (1996).

The majority of circuits, however, reject the notion that an expert can dispense with methodology if he or she has experience and training. Recognizing that this Court did not distinguish between an expert's experience and his methodology in *Daubert*, these circuits apply *Daubert* to the proposed

testimony of experts purporting to apply scientific knowledge, *regardless of the grounds for the expert's opinion*. The Third, Fifth, Sixth, Seventh, Eighth, and Eleventh Circuits have explicitly endorsed the application of the *Daubert* framework to applied science, mostly in the context of deciding whether to admit engineering testimony of the kind at issue in the instant case:

- *Surace* v. *Caterpillar, Inc.*, 111 F.3d 1039, 1055 (3d Cir. 1997) (affirming the district court's decision, in a design defect case, to exclude the testimony of an electro-magnetic engineer under *Daubert*);

- *Watkins* v. *Telsmith, Inc.*, 121 F.3d 984 (5th Cir. 1997) (applying *Daubert* analysis in determining the admissibility of a civil engineer's testimony in a design defect case);

- *Smelser* v. *Norfolk S. Ry.*, 105 F.3d 299, 303-304 (6th Cir. 1997) (concluding that proposed expert testimony of biomechanical engineer on, *inter alia*, alleged seat belt defect "cannot withstand *Daubert* scrutiny, and should not have been admitted into evidence"), cert. denied, 66 U.S.L.W. 3255 (U.S. Oct. 6, 1997) (No. 96-1949);

- *Cummins* v. *Lyle Indus.*, 93 F.3d 362, 367-368 (7th Cir. 1996) (noting that "our inquiry is governed by *Daubert*" and affirming exclusion of proposed engineering testimony on alleged defect in design of trim press); see also *Navarro v. Fuji Heavy Indus., Ltd.*, 117 F.3d 1027, 1032 (7th Cir. 1997) (applying *Daubert* to affidavit of expert, an experienced consultant in the fields of failure analysis, mechanical safety, and accident reconstruction, and affirming grant of summary judgment for defendant because affidavit was "nakedly conclusional"), petition for cert. filed (Sept. 25, 1997) (No. 97-597); *Deimer v. Cincinnati Sub-Zero Products, Inc.* 58 F.3d 341, 344-45 (7th Cir. 1995) (holding that testimony of proffered expert regarding

alleged defect in design of hypo-hyperthermia machine was inadmissible under *Daubert* where expert did not conduct any studies or apply his analysis to the facts of the case);

- *Peitzmeier* v. *Hennessy Indus., Inc.*, 97 F.3d 293, 297 (8th Cir. 1996) (stating that "the *Daubert* analysis is properly applied" to proposed testimony of engineering expert regarding alleged design defect in tire changer and excluding testimony as "wholly speculative"), cert. denied, 117 S. Ct. 1552 (1997); see also *Dancy v. Hyster Co.*, 1997 WL 590122, at *2 (8th Cir. Sept. 25, 1997) (applying *Daubert* to proposed testimony of mechanical engineer and finding testimony inadmissible because, *inter alia*, it "could be, but had not been, tested"); *Pestel v. Vermeer Mfg. Co.*, 64 F.3d 382, 384 (8th Cir. 1995) (applying *Daubert* to testimony of mechanical engineer who proposed to testify as to alleged design defect in stump cutter);

- *United States* v. *Lee*, 25 F.3d 997, 999 (11th Cir. 1994) (rejecting the contention that *Daubert* does not apply to the admission of results of tests from machines used to detect trace amounts of cocaine on defendant's personal effects; "on its own terms, *Daubert* applies not only to testimony about scientific concepts but also to testimony about the actual applications of those concepts").[4]

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[4] The First Circuit has suggested that it would follow a similar course. See *Bogosian* v. *Mercedes-Benz of N. Am., Inc.*, 104 F.3d 472, 479 (1st Cir. 1997) (affirming exclusion of engineering expert in case involving alleged automobile design defects, stating that "even if *Daubert*'s specific discussion of the admissibility of scientific principles did not strictly apply to [an expert's] testimony, the admissibility of the testimony was still controlled by the requirement of factual relevance and foundational reliability").

The courts of appeals have expressly recognized the existence of this conflict. In *Watkins*, for example, the Fifth Circuit noted that the Seventh and Eighth Circuits, in *Cummins* and *Peitzmeier*, respectively, had disagreed with the Tenth Circuit's decision in *Compton*. 121 F.3d at 989. The *Watkins* Court chose to follow the former approach, dismissing the latter view as "untenable." *Id.* at 990-991. Similarly, in *Tyus* v. *Urban Search Management*, 102 F.3d 256, 263 (7th Cir. 1996), cert. denied, 117 S. Ct. 2409 (1997), the Seventh Circuit stated that "we do not agree with the Tenth Circuit's decision in *Compton* * * * that [the *Daubert* framework] is limited to cases of novel scientific theories or methodologies." More recently, the Eighth Circuit has noted the conflict, referencing its own decision in *Peitzmeier* and the Ninth Circuit's *McKendall* case. *Tenbarge* v. *Ames Taping Tool Systems, Inc.*, 1997 WL 651986, at *4 n.4 (8th Cir. Oct. 22, 1997).

In sum, then, the conflict is stark, and nearly every circuit has spoken on this issue. This petition thus presents the kind of clear, explicit conflict among the circuits that has historically motivated the exercise of the certiorari jurisdiction. See Robert L. Stern, et al., SUPREME COURT PRACTICE 168-171 (7th ed. 1993). See also, *e.g.*, Lisa Agrimonti, *The Limitations of Daubert and Its Misapplication To Quasi-Scientific Experts*, 35 WASHBURN L.J. 134, 147-148 (1995) (noting the "split among the courts" and "lack of uniformity in *Daubert*'s application, particularly with regard to quasi-scientific experts" such as engineers). Moreover, this circuit conflict is both mature and deep-seated; most of the circuits have opined on this question without anything approaching a clear consensus. See Stern, *supra*, at 170 n.19. Given the severity of the conflict and the recurring nature of the issue presented here, it is time for this Court to step in.[5]

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[5] Since the Court declined to review the Tenth Circuit's decision in *Compton*, 117 S. Ct. 611 (1996), the conflict among

(continued...)

C. The Fourth Circuit's Approach To *Daubert* Is Fundamentally Flawed.

For a number of reasons, the minority view adopted by the court of appeals here has drawn strong criticism from other circuits and commentators.

1. First, to say that one can determine whether a product is defectively designed from experience and training — without further explanation of the connective reasoning leading from hypothesis to conclusion — is precisely the kind of "I know it when I see it" testimony that *Daubert* does not permit. "*Daubert* commands that in court, science must do the speaking, not merely the scientist." *Cavallo* v. *Star Enterprise*, 892 F. Supp. 756, 761 (E.D. Va. 1995), *aff'd in relevant part*, 100 F.3d 1150 (4th Cir. 1996), petition for cert. filed (Mar. 19, 1997) (No. 96-1493); see also *Porter* v. *Whitehall Lab.*, 9 F.3d 607, 614 (7th Cir. 1993) ("If experts cannot tie their assessment of data to known scientific conclusions, based on research or studies, then there is no comparison for the jury to evaluate and the experts' testimony is not helpful to the jury"). The hazard of the Fourth Circuit's approach, as one commentator noted, is that "pseudoscientists could draw the perverse conclusion * * * that the key to admission is to remain unscientific in order to avoid standards they find difficult to meet." David L. Faigman, *Making the Law Safe for Science: A Proposed Rule for the*

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[5](...continued)
the circuits has become much deeper — the Third, Fourth, Fifth, Sixth, and Ninth Circuits have recently weighed in on one side or the other — and has been explicitly recognized by the circuits themselves. There is no need for further "percolation" in the courts of appeals; all but the First, District of Columbia, and Federal Circuits have taken a firm position on this issue. Cf. note 4, *supra*. In addition, as noted at pp. 17-22, *infra*, the *Compton* approach continues to draw strong criticism from courts and commentators.

Admission of Expert Testimony, 35 WASHBURN L.J. 401, 422 (1996). This is a "scary" prospect because it implies that experts should "not test their hypotheses," even though "*Daubert* * * * require[s] otherwise." *Id.* at 426.

An engineer's "experience" and "training" is entitled to assume the status of expert testimony, if at all, only because he or she has employed the tools of the profession by applying concepts of scientific engineering to a particular issue in the case. The court of appeals, however, evidently believed that Reed could plausibly testify about a purported defect in the pedal configuration without applying accepted principles of engineering. That was simply wrong. The premise underlying the plaintiff's case (and which Reed's testimony was intended to establish) — that the proximity of the SRC and brake pedals on the Case 1130 causes dangerous inadvertent co-engagement of the pedals — is an eminently testable proposition, as demonstrated by the study introduced at trial by Case. C.A. App. 840-843, 2119 (in study involving 1,158 test drives, inadvertent misapplication of the pedals on the Case 1130 occurred less than .2% of the time, which is about the same rate at which automobile drivers inadvertently misapply the accelerator and brake pedals). The Case test was not the only way of testing the hypothesis, but whatever the test, it must be rigorous enough to satisfy the reliability and relevance commands of Rule 702 and *Daubert*.

Reed, however, offered no rigorous testing — by himself or anyone else — to support his opinions. Reed's casual inspection of Freeman's Case 1130 and the elementary testing he performed at Freeman's residence, see pp. 3-4, *supra*, is no substitute for the controlled experiments that should have been undertaken. In the absence of any such testing, Reed's methodology lacked any resemblance to the scientific method, especially in view of Reed's failure to connect any of the materials upon which he claimed to rely to his opinion. *United States* v. *Bynum*, 3 F.3d 769, 773 (4th Cir. 1993) (defining

scientific method as "subjecting testable hypotheses to the crucible of experiment in an effort to disprove them"); Faigman, *supra*, 35 WASHBURN L.J. at 426-427 ("If a discipline advances testable hypotheses, they must be tested before being advanced in court. * * * [T]he law should expect scientists (and scientist-want-to-be's) to rigorously test their hypotheses with all of the tools they have available"). Nonetheless, the Fourth Circuit held that Reed was entitled to offer his opinion, even though he did not demonstrate that his opinion is reliably based on the scientific knowledge that is the foundation of his engineering expertise.

2. The Fourth Circuit's ruling allows purported experts who base their testimony on easily manipulable criteria like "experience and training" to get a free pass to the jury while their more rigorous colleagues who subject their theories to testing, publication, peer review, and the like must satisfy the *Daubert* standards. As the Fifth Circuit commented in criticizing as "untenable" the line of cases followed by the court of appeals here:

> [I]t seems exactly backwards that experts who purport to rely on general engineering principles and practical experience might escape screening by the district court simply by stating that their conclusions were not reached by any particular method or technique. The moral of this approach would be, the less factual support for an expert's opinion, the better.

Watkins v. *Telsmith, Inc.*, 121 F.3d 984, 991 (5th Cir. 1997). Similarly, the Seventh Circuit has held that although "expertise may be based on experience or training," the court still "must" consider whether the expert's "methodology" satisfies the "'standards of intellectual rigor'" set forth in *Daubert*. *Tyus* v. *Urban Search Management*, 102 F.3d 256, 263 (7th Cir. 1996), cert. denied, 117 S. Ct. 2409 (1997). See also *Navarro* v. *Fuji Heavy Indus., Ltd.*, 117 F.3d 1027, 1031-1032 (7th Cir. 1997)

(Posner, C.J.) (holding that proposed expert engineer "[must] show how his conclusion * * * is grounded in — follows from — an expert study of the problem" because "a conclusion without any support is not one based on expert knowledge and entitled to the dignity of evidence"), petition for cert. filed (Sept. 25, 1997) (No. 97-597).

Commentators likewise have seized on the susceptibility of the minority approach to manipulation by pseudo-experts seeking to avoid easily undertaken testing and analysis. As one observer has recognized, this approach "seems to turn *Daubert* on its head. * * * [A]n expert can get around the *Daubert* inquiry by saying that no methodology was used at all," even though "[i]f there is no methodology, then the expert's opinion is necessarily speculative." Jennifer Laser, Note, *Inconsistent Gatekeeping in Federal Courts: Application of Daubert* v. *Merrell Dow Pharmaceuticals, Inc. to Nonscientific Expert Testimony*, 30 LOY. L.A. L. REV. 1379, 1409 (1997). Indeed, freely admitting testimony by experts who eschew any reliance on standard professional methodology "creates an escape hatch by which *Daubert*'s reliability factors can be bypassed" and "penalize[s] the expert who, laudably, at least attempts to consider science but reward[s] the one who, lamentably, avoids it." Michael Hoenig, *New Cases on Experts After Daubert*, N.Y. LAW J. 6 (May 13, 1996). In sum, the anomalous rule adopted by the Fourth Circuit provides the engineering expert who remains "unscientific" with complete freedom to testify, while his more rigorous colleague must satisfy the *Daubert* standards of reliability and fit before being permitted to take the stand. See also Jonathan R. Schofield, Note, *A Misapplication of Daubert: Compton* v. *Subaru of America Opens the Gate for Unreliable and Irrelevant Expert Testimony*, 1997 B.Y.U. L. REV. 489, 515 ("an expert's testimony that is likely to fail under *Daubert*'s scientific factors could be repackaged under the

guise of technical or nonscientific evidence and could avoid the application of *Daubert*").[6]

3. The Fourth Circuit's interpretation of Rule 702 is not even remotely administrable. The various methods by which an expert may become qualified under Rule 702 — through "knowledge, skill, experience, training, or education" — are overlapping and malleable. This creates the same kind of perverse incentives sketched in the previous paragraphs, as experts will find their testimony more easily admitted if they trumpet their "training" and "experience" as the bases for their opinions. Of course, knowledge and skill can be (and indeed almost always are) the result of experience or training. But to say that the *Daubert* framework disappears when the expert testifies from "experience" or "training," but not when he or she testifies from "knowledge," is thus to invite every expert merely to invoke the means by which he acquired his expertise, rather than the expertise itself, in presenting himself as an expert under Rule 702. It cannot be that the vital requirements set forth in *Daubert* can be so easily manipulated and circumvented.

At its core, the critical function of the trial court's "gatekeeper" duty under *Daubert* is to "ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable." 509 U.S. at 589. In the absence of a rigorous examination of the scientific bases for the expert's conclusion,

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[6] Indeed, under a broad reading of the Fourth Circuit's decision, one could conclude that *any* expert purporting to testify on the basis of "experience and training" can evade the strictures of *Daubert*. Thus, for example, the reliability and relevance prongs of *Daubert* would apply to an epidemiologist who has conducted a detailed, controlled study of the relationship between exposure to a substance and incidence of disease, but not to a patient's treating physician who offers an opinion on medical causation on the basis of simply having observed the patient (and perhaps others like her).

however, courts following the approach of the court of appeals here can do no better than to conclude, as the Ninth Circuit did in *McKendall*, that the expert's testimony "is both '*facially* helpful and relevant' and *seemingly* reliable." 122 F.3d at 807 (emphasis added). That is not enough under *Daubert* or Rule 702.

D. The Application Of *Daubert* To Testimony Concerning Applied Scientific Knowledge Is An Important And Recurring Question.

As illustrated by the cases discussed above, the first question presented here — whether and how *Daubert* applies to expert testimony purporting to apply scientific knowledge — is perhaps the most prominent of the unanswered questions generated by *Daubert*.[7] And the need for clear guidance in this area is underscored by the "enormous increase in the use of scientific evidence" in federal litigation in recent years. Development in the Law, 108 HARV. L. REV. at 1485.

Much of this increase has taken place in the context of the explosion in product liability actions, nearly 39,000 of which were filed in the federal district courts in the 12 months ending on June 30, 1996 alone. Administrative Office of the U.S. Courts, Statistics Division, ANNUAL REPORT OF THE DIRECTOR, table S-7 (unpub. 1996). Whether a particular product is defective almost always involves expert testimony — often by an engineer — and at the moment, whether that testimony will be admissible depends more on the circuit in which an action happens to be filed than on the substance of the expert's testimony. See Malcolm E. Wheeler, *How Now, Daubert:*

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[7] In fact, the questions raised in this petition are closely related to the Chief Justice's query in *Daubert*: whether there is any meaningful difference under *Daubert* between "scientific" and "technical" knowledge. See 509 U.S. at 600 (Rehnquist, C.J., concurring in part and dissenting in part).

Dilemma About Application, 15 NO. 10 PROD. LIAB. L. & STRATEGY 1, 1 (1997) ("the uncertainty in and disparity among the lower courts have become particularly evident when the proffered expert testimony is opinion testimony that a particular product design is defective or unreasonably dangerous"); Wendy Fleishman & Russell Jackson, *Challenges to the Admissibility of Expert Testimony: What Works after Daubert?* 723 PLI/COMM 121, 123 (1995) ("One of the most critical issues in products liability litigation today is the admissibility of expert testimony. Indeed, for many such cases, having admissible expert testimony is a prerequisite to recovery, as the nature of the plaintiff's injuries — as well as their potential causes — are beyond the experience of the average lay juror").

In the particular area of design defect cases, there is even a more critical need for uniformity on the *Daubert* issue, since most products, as here, are distributed nationwide. Moreover, in design cases, "experts are routinely asked to address product safety performance, safer alternative designs, and issues of causation, all of which are likely to raise *Daubert* red flags." Nelson G. Apjohn & Susan M. Quill, *Post-"Daubert" Admissibility of Expert Testimony on Mechanical Design and Engineering Issues*, 23 PROD. SAFETY & LIAB. REP. (BNA) 533, 557 (1995). And in cases — like this one — in which the plaintiff proffers the testimony of a single expert on the issue of design defect, the *Daubert* ruling often will be dispositive of the entire action.

II. THE CIRCUITS ARE ALSO DIVIDED ON HOW TO APPLY THIS COURT'S DIRECTIVE THAT THE FOCUS OF THE INQUIRY MUST BE ON THE EXPERT'S "PRINCIPLES AND METHODOLOGY," NOT ON THE EXPERT'S "CONCLUSIONS."

This Court stated in *Daubert* that the "focus" of the admissibility inquiry "must be solely on [the expert's] principles and methodology, not on the conclusions that they generate."

509 U.S. at 595. The Court did not elaborate on this pronouncement, and the circuits are now divided on how to characterize, and thus rule on, a challenge to the reasoning (or lack thereof) connecting an expert's data to his conclusions. See generally Lawrence S. Pinsky, Comment, *The Use of Scientific Peer Review and Colloquia to Assist Judges in the Admissibility Gatekeeping Mandated by Daubert*, 34 HOUS. L. REV. 527, 542 (1997) (noting the "confusion regarding the Court's focus on the methodology and seeming placement of the conclusions beyond the scope of consideration"); Bert Black, *Winning the Expert Wars in the Age of Daubert*, SB16 ALI-ABA 13, 19 (1996) (discussing differing views on "*Daubert*'s distinction between methodology and conclusions"). As explained below, there is a circuit split concerning whether this Court meant to impose a rigid compartmentalization of the trial court's review of the expert's "methodology" and his "conclusions," or whether a proper "focus" on "methodology" means that the court must carefully examine each link in the chain of an expert's reasoning from hypothesis all the way up to ultimate conclusions.

1. The Fourth Circuit opted for the former view. The court concluded that a challenge to an expert's reasoning presented only a jury question relating to the expert's "conclusions," rather than an admissibility question. Thus, although the court of appeals recognized that Case had challenged the "deficiencies in [Reed's] analysis," the court stated nonetheless that "Case does not challenge Reed's 'reasoning or methodology' but his ultimate conclusion, that the 1130 is unreasonably dangerous." App., *infra*, 9a n.6, 11a. In short, even though Case was challenging the absence of any sound basis for Reed to extrapolate from the materials he reviewed and the limited testing he performed to his ultimate conclusion that the Case 1130 was defectively designed, the

court interpreted this as a challenge to Reed's conclusion *qua* conclusion.[8]

The Eleventh Circuit adopted a similar approach in *Joiner* v. *General Electric Co.*, 78 F.3d 524 (11th Cir. 1996), cert. granted on other grounds, 117 S. Ct. 1243 (1997). The majority opinion in the court of appeals held that in conducting a *Daubert* inquiry, the district judge must "view[ ] the bases of an expert's opinion as a whole," *id.* at 533, instead of reviewing "individual studies" or "pieces of evidence," *id.* at 532. Or, as Judge Birch observed in his concurring opinion, determining "[w]hether the conclusions advanced from the stated premises in fact follow" is not part of the district court's gatekeeping role. *Id.* at 534 (Birch, J., concurring). In sum, as the *Joiner* majority explained,

> Opinions of any kind are derived from individual pieces of evidence, each of which by itself might not be conclusive, but when viewed in their entirety are the building blocks of a perfectly reasonable conclusion, one reliable enough to be submitted to a jury along with the tests and criticisms cross-examination and contrary evidence would supply. As the Supreme Court said in *Daubert*, "[t]hese conventional devices, rather than wholesale exclusion under an uncompromising 'general acceptance' test, are the

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[8] It is clear that Case's objection to Reed's testimony is based on the complete absence of any reasoning explaining how Reed got from the data he considered (three publications and the "tests" that Reed conducted) to his conclusion. See Pet. C.A. Br. 24 (arguing that "Reed's opinions do not pass muster under *Daubert*" because, *inter alia*, "Reed admittedly offered no testing by himself or others that supports his opinions," "Reed's methodology bears no resemblance to the scientific method," and "[Reed] made no effort to justify his conclusions by citation to published studies or applicable industry standards").

> appropriate safeguards *where the basis of scientific testimony meets the standards of Rule 702."*

Id. at 532 (emphasis added).

The Fourth Circuit here, in similar fashion, concluded that the opportunity in cross-examination to "highlight[ ] what it perceived to be deficiencies in [Reed's] analysis * * * afforded Case the 'appropriate means' for discrediting the expert testimony it found suspect." App., *infra*, 11a. And, like the Eleventh Circuit, the Fourth Circuit also relied on language from Daubert in support of its reasoning: "'Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky *but admissible* evidence.'" *Id.* at 12a (emphasis added) (citing *Daubert*, 509 U.S. at 596).

2. While the court of appeals below and the Eleventh Circuit believed that *Daubert* supported their conclusions about the proper means of probing weaknesses in an expert's analysis, any such reliance is misplaced. In particular, the language from *Daubert* emphasized in the foregoing paragraphs clearly indicates that a condition precedent to the use of the "conventional devices" to which the courts of appeals looked is that the expert opinion in question "meets the standards of Rule 702" and therefore is "admissible." 509 U.S. at 596. Thus, every step in the Rule 702 analysis must be complete before *Daubert* gives way to cross-examination as a tool for testing the "perceived * * * deficiencies," App., *infra*, 11a in an expert's analysis.

Contrary to the views of the court of appeals below and the Eleventh Circuit, whether an expert's stated conclusions in fact follow from his premises is not simply a matter for cross-examination, but rather is a critical inquiry in assessing the reliability of an expert's proposed testimony under *Daubert* and Rule 702. This is, at bottom, an inquiry into the expert's

methodology; as one observer concisely summarized, "[m]ethodology involves the process by which the expert arrived at her conclusion." JoAnne A. Epps, *Clarifying the Meaning of Federal Rule of Evidence 703*, 36 B.C. L. REV. 53, 69 (1994).

3. The view that *Daubert* does not require a detailed examination of an expert's methodology as a precondition of admitting his testimony misapprehends both the nature of science and the rigor with which federal courts must ascertain the "good grounds" for an expert's opinion. Science, as this Court recognized in *Daubert*, "'is not an encyclopedic body of knowledge about the universe.'" 509 U.S. at 590. Nor is it simply raw data or bare conclusions. Rather, science "represents a *process* for proposing and refining theoretical explanations about the world that are subject to further testing and refinement." *Ibid.* As scientists work to prove (or disprove) various theories, they build on their own and each others' work in progressing, often one step at a time, from hypothesis to conclusion. While "arguably, there are no certainties in science," *ibid.*, the rigorous empiricism of the scientific method "'is what distinguishes science from other fields of human inquiry,'" *id.* at 593.

The Fourth Circuit's approach undermines this empiricism by preventing trial judges from undertaking a critical inquiry that goes to the essence of *Daubert* — namely, whether the purported bases for an expert's opinion actually support that opinion. As several courts of appeals have recognized, *Daubert* requires gatekeepers to ascertain that jurors are exposed only to real science, not merely the unsupported conclusions of well-credentialed scientists. See, *e.g.*, *Rosen* v. *Ciba-Geigy Corp.*, 78 F.3d 316, 319 (7th Cir.) (Posner, C.J.) ("'an expert who supplies nothing but a bottom line supplies nothing of value to the judicial process'"), cert. denied, 117 S. Ct. 73 (1996); *Daubert* v. *Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1319 (9th Cir.) (Kozinski, J.) ("We've been presented with only

the experts' qualifications, their conclusions and their assurances of reliability. Under *Daubert*, that's not enough"), cert. denied, 116 S. Ct. 189 (1995). Close scrutiny of not only the data or underlying bases of expert scientific opinions, but also the reasoning that connects the data to an issue in the case, prevents clever experts-for-hire from tainting the jury with ultimate conclusions that do not follow from the purported bases for those conclusions.

4. Thus, it is not surprising that most of the courts of appeals applying *Daubert* have agreed that the distinction between methodology and conclusions upon which the court of appeals here evidently relied "has only limited practical import," *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 746 (3d Cir. 1994), and does not inhibit the district court's duty to sift through the stated bases for an expert's conclusion to confirm that his reasoning is sound (*i.e.*, that it is "scientific knowledge" and that it "fits" the case). See, *e.g.*, *Raynor* v. *Merrell Pharmaceuticals, Inc.*, 104 F.3d 1371, 1374-1375 (D.C. Cir. 1997) (noting that the line between methodology and conclusions "is not all that clear, as propositions may be formulated as conclusions or methodologies with comparatively minor linguistic adjustment"). And a number of circuits have held that faithfulness to *Daubert*'s "reliability" prong requires courts, in exercising their gatekeeping role, to carefully examine each link in the chain of reasoning or methodology underlying the expert's proposed testimony. As the Third Circuit has explained,

> *Daubert*'s requirement that the expert testify to scientific knowledge — conclusions supported by good grounds for each step in the analysis — means that *any* step that renders the analysis unreliable under the *Daubert factors renders the expert's testimony inadmissible. This is true whether the step completely changes a reliable methodology or merely misapplies that methodology.*

Paoli R.R. Yard, 35 F.3d at 745 (emphasis in original).

The Seventh Circuit also has firmly endorsed this view. In a recent design defect case, Chief Judge Posner explained that one of the criteria of *Daubert*, "as we have been at pains to emphasize, is that the expert show how his conclusion * * * is grounded in — follows from — an expert study of the problem." *Navarro*, 117 F.3d at 1032; see also *Brock* v. *Merrell Dow Pharmaceuticals, Inc.*, 874 F.2d 307, 309-310 (5th Cir. 1989) ("courts must critically evaluate the reasoning process by which the experts connect data to their conclusions in order for courts to consistently and rationally resolve the disputes before them"); cf. *Joiner*, 78 F.3d at 535 (Smith, J., dissenting) (observing that the failure to examine the expert's connective reasoning reduces the court (and the jury) to "accept[ing] blindly the expert's word to fill the analytical gap between proffered 'scientific knowledge' and the expert's conclusions").

In the absence of rigorous examination of each step in an expert's analysis, from hypothesis to conclusion, courts and juries would have to rely on the word of hired experts — here, Reed's statement that he had exercised "[s]ound engineering judgment," C.A. App. 679 — that their opinions constituted "scientific knowledge" and "fit" an issue in the case. It is simply inconceivable that this Court abdicated to each individual expert the responsibility for ensuring compliance with the Federal Rules of Evidence. Rather, under *Daubert*, the district court, in fulfilling its gatekeeping duty, must make a preliminary determination that an expert's proposed opinion rests on "good grounds" all the way from hypothesis to ultimate conclusion about an issue in the case. See *Paoli R.R. Yard*, 35 F.3d at 745. This step — which the court of appeals omitted altogether — establishes the trustworthiness of "any and all" scientific opinions that are submitted to the jury.

In forgoing any examination of an expert's connective reasoning, the Fourth and Eleventh Circuits have created a huge "escape hatch" through which experts can avoid any serious inquiry into the reliability of their experienced-based "scientific" conclusions that, ironically, their more rigorous colleagues still must face. In these circumstances, it becomes the scientist himself (and not the science he has performed) that attests to the reliability of the opinion. *Daubert* does not permit this type of self-authentication by paid experts.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted.

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